

Claims

1. An electrical connector comprising:
a connector housing; and
5 at least one deformable connector terminal arrangement disposed at the connector housing, the or each connector terminal arrangement comprising:
a terminal comprising a movable resilient arm portion, a contact
portion at one end of the resilient arm portion for connecting to a first
electrical point and a support portion connected to another end of the
10 resilient arm portion and for connecting to a second electrical point;
a first pivot portion for pivoting of the resilient arm portion relative
to the support portion; and
a second pivot portion for pivoting of the contact portion relative
to the resilient arm portion.
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2. A connector according to claim 1, wherein the resilient arm portion is
operable to deflect about the first pivot portion during movement of the contact
portion in a first direction up to a first deflection position, and the contact portion
is operable to deflect about the second pivot portion during further movement of
20 the contact portion in the first direction beyond the first deflection position.
3. A connector according to claim 1 or 2, wherein the first pivot portion
connects the resilient arm portion to the support portion, the first pivot portion
resiliently resists deflection of the resilient arm portion if a force is applied to the
25 contact portion.
4. A connector according to any one of the preceding claims, wherein the
resilient arm portion and the support portion are elongate.
- 30 5. A connector according to any one of the preceding claims, wherein the
contact portion comprises a bent segment having an arched portion for
contacting the first electrical point.

6. A connector according to any one of the preceding claims, wherein the terminal further comprises the first pivot portion, disposed between the resilient arm portion and the support portion.
- 5 7. A connector according to claim 6, wherein the first pivot portion is formed integrally with the resilient arm portion and the support portion.
8. A connector according to claim 6 or 7, wherein the first pivot portion comprises a resilient connecting portion connecting the resilient arm portion and the support portion;
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9. A connector according to any one of claims 6 to 8, wherein the first pivot portion comprises a bend joining the resilient arm portion and the support portion.
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10. A connector according to any one of claims 6 to 9, wherein the first pivot portion comprises a U-shaped segment joining the resilient arm portion and the support portion, the resilient arm portion being substantially superposed over the support portion.
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11. A connector according to any one of the preceding claims, wherein the second pivot portion comprises a protuberance disposed on at least one of the terminal and the housing.
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12. A connector according to claim 11, wherein the or each protuberance of a terminal arrangement has a rounded surface.
13. A connector according to claim 11, wherein the or each protuberance of a terminal arrangement has a flat surface.
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14. A connector according to any one of claims 11 to 13, wherein the or each protuberance of a terminal arrangement is solid.

15. A connector according to any one of claims 11 to 13, wherein the or each protuberance of a terminal arrangement is hollow.
- 5 16. A connector according to any one of the preceding claims, wherein the terminal further comprises the second pivot portion, disposed between the resilient arm portion and the contact portion.
- 10 17. A connector according to claim 16, wherein the second pivot portion is formed integrally with the resilient arm portion.
18. A connector according to claim 15 or 16, wherein the second pivot portion extends from a surface of the resilient arm portion facing the support portion.
- 15 19. A connector according to any one of claims 16 to 18, wherein the second pivot portion comprises a bent portion of the resilient arm portion.
20. A connector according to claim 19, wherein the bent portion is arcuate.
- 20 21. A connector according to any one of claims 16 to 20, wherein the second pivot portion is operable to pivot against the support portion.
22. A connector according to any one of the preceding claims, wherein the second pivot portion is disposed on the housing.
- 25 23. A connector according to any one of the preceding claims, wherein the resilient arm portion is disposed at an angle with respect to the support portion.
24. A connector to any one of claims 1 to 22, wherein the resilient arm portion is substantially parallel to the support portion.
- 30 25. A connector according to any one of the preceding claims, wherein the connector terminal is formed of an electrically conductive material.

26. A connector according to any one of the preceding claims, wherein the connector housing is formed of an electrically insulating material.
- 5 27. A connector according to any one of the preceding claims, wherein the terminal is elongate, with the contact portion at an opposite end from the support portion.
- 10 28. A connector according to any one of the preceding claims, wherein the connector housing comprises one or more cavities, with individual ones of the connector terminal arrangements arranged in individual ones of the cavities.
- 15 29. A connector according to claim 28, further comprising separating walls between adjacent cavities.
- 20 30. A connector according to claim 28 or 29, wherein individual cavities are defined by a roof portion spaced apart from a base portion, with the resilient arm portion and the support portion of a connector terminal arrangement disposed within the cavity.
- 25 31. A connector according to any one of the preceding claims, wherein the support arm portion further comprises a tail portion extending from a free end of the support arm portion, to contact the second electrical point.
- 30 32. A connector according to claim 31 when dependent on at least claim 28, wherein the contact portions and the tail portions of the terminal protrude from individual cavities.
33. A connector according to claim 31 or 32, wherein the tail portion comprises a first free end of the terminal.
34. A connector according to any one of the preceding claims, wherein the contact portion comprises a second free end of the terminal.

35. A connector according to any one of the preceding claims, wherein the housing further comprises a mounting pin for mounting the housing in an assembly.
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36. An assembly comprising:
a first circuit;
a second circuit; and
an electrical connector for electrically connecting the first circuit to the
10 second circuit;
wherein the electrical connector is as defined in any one of the preceding claims.
37. An assembly according to claim 36, wherein:
15 the connector is mounted to connect the first and second circuits electrically;
the first circuit comprises one or more first electrical points with which the one or more contact portions are in contact; and
the second circuit comprises one or more second electrical points with
20 which the one or more support portions are in contact.
38. An assembly according to claim 37, wherein
the one or more resilient arm portions are pivoted about the respective first pivot portions; and
25 the one or more contact portions are pivoted about the respective second pivot portions.
39. An assembly according to any one of claims 36 to 38, wherein the first circuit is a printed circuit board.
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40. An assembly according to any one of claims 36 to 39, wherein the second circuit is a flex circuit.

41. A method of connecting an assembly, which assembly is as defined in any one of claims 36 to 40, the method comprising:
- contacting one or more first electrical points of the first circuit with one or more contact portions of the connector;
- 5 contacting one or more second electrical points of the second circuit with one or more support arm portions of the connector;
- moving the first circuit against a biasing force from the one or more contact portions of the connector, deflecting the resilient arm portion about the first pivot portion during movement of the contact portion in a first direction to a first deflection position, and deflecting the contact portion about the second pivot portion during further movement of the contact portion in the first direction beyond the first deflection position.
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42. A method according to claim 41, further comprising mounting the connector to the second circuit prior moving the first circuit against the biasing force.
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43. A method according to claim 41 or 42, further comprising mounting the first circuit to the connector.
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44. A method according to claim 43, wherein mounting the first circuit to the connector comprises moving the first circuit against the biasing force.
45. A method according to any one of claims 41 to 44, wherein moving the first circuit against the biasing force is achieved by screwing the first circuit down.
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